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Application No.	09/934,791	Prepared by	NPB	Tracking Number	05907057
Examiner-GAU	IP - 2828	Date	6/16/04	Week Date	2/16/04
		No. of queries	1	IPW	

JACKET

a. Serial No.	f. Foreign Priority	k. Print Claim(s)	p. PTO-1449
b. Applicant(s)	g. Disclaimer	l. Print Fig.	q. PTOL-85b
c. Continuing Data	h. Microfiche Appendix	m. Searched Column	r. Abstract
d. PCT	i. Title	n. PTO-270/328	s. Sheets/Figs
e. Domestic Priority	j. Claims Allowed	o. PTO-892	t. Other

SPECIFICATION a. Page Missing b. Text Continuity c. Holes through Data d. Other Missing Text e. Illegible Text f. Duplicate Text g. Brief Description h. Sequence Listing i. Appendix j. Amendments k. Other	MESSAGE	
	Original claim 32 is cancelled on claim pages dated 01/20/04, but allowed in NOA and index of claims.	
	Please advise/renumber the claims in the index, if necessary.	
CLAIMS a. Claim(s) Missing b. Improper Dependency c. Duplicate Numbers d. Incorrect Numbering e. Index Disagrees f. Punctuation g. Amendments h. Bracketing i. Missing Text j. Duplicate Text k. Other	<i>Thank you</i>	
	initials <i>MHS</i>	
	RESPONSE	
initials		

Serial No. 09/934,791

PATENT
Docket No. 58027-012900

Claim 26 (previously amended): The method according to claim 19, further including undoped DBRs.

Claim 27 (currently amended): The method according to claim 16, further effecting wherein the VCSEL to exhibit continuous wave operation at temperatures greater than about 80 degrees Celsius.

Claim 28 (previously amended): The method according to claim 20, further including an n-type InP and p-type InAlAs in the tunnel junction.

Claim 29 (currently amended): The method according to claim 16, further providing a thickness of about $1\text{-}3\lambda$ times the optical wavelength to each of the heat spreading layers.

Claim 30 (cancelled)

Claim 31 (currently amended): A vertical-cavity surface-emitting laser (VCSEL) operating at a reduced temperature, the VCSEL comprising:

a first and a second reflecting surfaces in a VCSEL;

an active layer in the VCSEL;

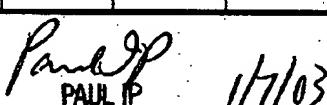
a first and a second thermally conductive InP heat spreading layers in the VCSEL, said first heat spreading layer being in between the first reflecting surface and the active layer, and the second heat spreading layer being in between the second reflecting surface and the active layer; and

an at least one metal contact adjacent the first thermally conductive InP heat spreading layer for permitting current to be injected through the at least one InP heat spreading layer, the current bypassing the first reflecting surface; and

the first and second heat spreading layers allowing heat generated in the VCSEL to bypass the first and second reflecting surfaces due to the higher thermal conductivity of the first and second heat spreading layers relative to the first and a second reflecting surfaces, thereby reducing the temperature of the VCSEL.

Claim 32 (cancelled)

Issue Classification		Application No.	Applicant(s)	
		09/934,791	COLDREN ET AL.	
Examiner		Phillip Nguyen	Art Unit	
		2828		

ISSUE CLASSIFICATION			
ORIGINAL		CROSS REFERENCE(S)	
CLASS	SUBCLASS	CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)
372	96	372	46
INTERNATIONAL CLASSIFICATION			
H	0	1	S 3/08
H	0	1	S 5/00
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Phillip Nguyen 01/02/2004 (Assistant Examiner) (Date)			
 PAUL IP 1/1/03 SUPERVISORY PATENT EXAMINER TECHNOLOGY CENTER 2800 (Primary Examiner) (Date)			
Total Claims Allowed: 32			
		O.G. Print Claim(s)	O.G. Print Fig.
		1	1

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant		<input type="checkbox"/> CPA		<input type="checkbox"/> T.D.		<input type="checkbox"/> R.1.47	
Final	Original	Final	Original	Final	Original	Final	Original
1 1		29 31		61	91	121	151
2 2		30 32		62	92	122	152
3 3		31 33		63	93	123	153
4 4		32 34		64	94	124	154
5 5		35		65	95	125	155
6 6		36		66	96	126	156
7 7		37		67	97	127	157
8 8		38		68	98	128	158
9 9		39		69	99	129	159
10 10		40		70	100	130	160
11 11		41		71	101	131	161
12 12		42		72	102	132	162
13 13		43		73	103	133	163
14 14		44		74	104	134	164
15		45		75	105	135	165
15 16		46		76	106	136	166
16 17		47		77	107	137	167
17 18		48		78	108	138	168
18 19		49		79	109	139	169
19 20		50		80	110	140	170
20 21		51		81	111	141	171
21 22		52		82	112	142	172
22 23		53		83	113	143	173
23 24		54		84	114	144	174
24 25		55		85	115	145	175
25 26		56		86	116	146	176
26 27		57		87	117	147	177
27 28		58		88	118	148	178
28 29		59		89	119	149	179
29		60		90	120	150	180